Operation manual for Rassoul controller

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Overview

Obey all safety notes and warnings present on the unit.

In case of a malfunction, switch off the unit immediately and prevent a restart. Repair malfunctions promptly.

After any repair work, have qualified personnel check the safe operation of the unit.

Use original spare parts only.
Additional national safety regulations also fully apply to the operation of this unit.

Accident Prevention Regulations

Comply with the accident prevention regulation
Accident Prevention Regulation Electrical Systems and Equipment to prevent injury to yourself and others.

Operation of the Unit

Do not perform any work which compromises the safety of the unit.

Regularly check that all safety and monitoring devices are functioning normally.

Do not remove or disable safety devices.

Installation, Dismantling, Maintenance and Repair of the Unit

Disconnect unit components from power supply prior to maintenance or repair work.

Attaching or installing **additional components** is permitted only with the **written consent** of the manufacturer.

Electrical

Work on the electrical system must be performed by qualified personnel.

Disconnect unit components from power supply prior to work

In case of a malfunction in the electrical power supply, switch off the unit immediately.

Use only original fuses with the appropriate amperage rating.

Regularly check the unit's electrical equipment. Promptly repair any damage, such as loose connections or burned wiring. After proper electrical installation or repair, test all safety mechanisms (such as grounding resistance).

HygroMatik steam humidifiers are IP20-protected. Make sure that the unit is protected from drips in its installed location.

Installing a humidifier in a room without water discharge requires safety devices to protect against water leakages.

2.3 Disposal after Dismantling

Note: The operator is responsible for the disposal of unit components as required by law.

1. Function

The controller can be used for 2 general functions: **Steam Room** or **Rassoul**. The fiberoptics and the general illumination are activated as soon as the unit is switched-on by the main switch on the right side of the control housing.

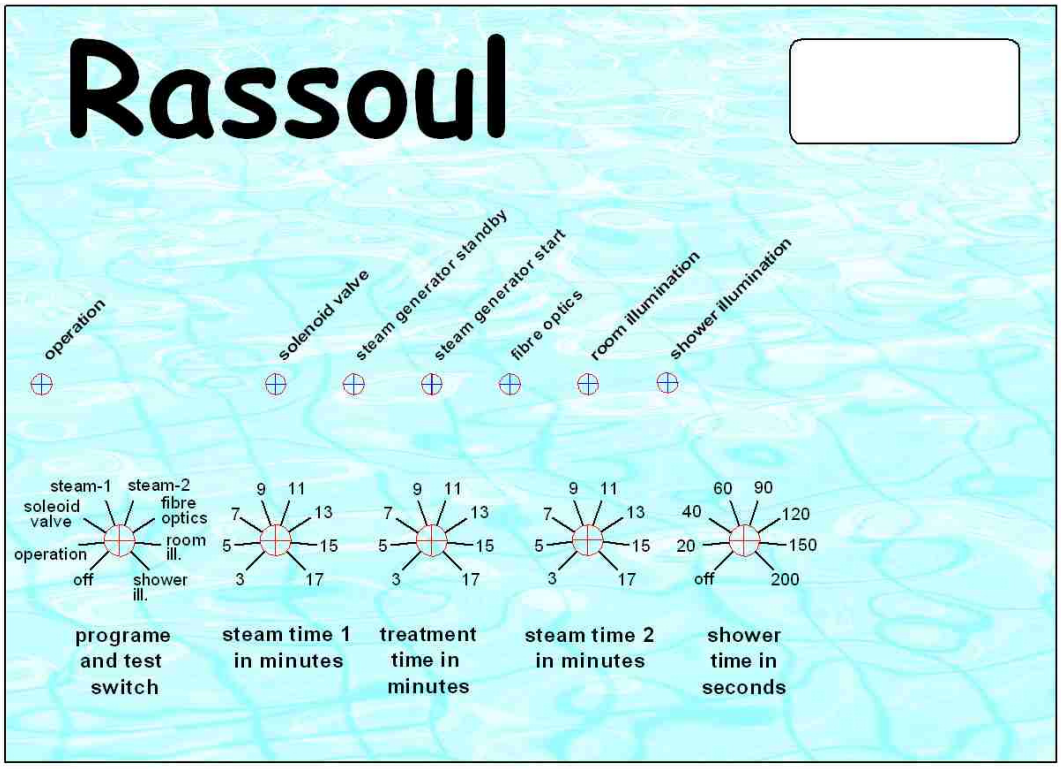
The switch-over from Rassoul- to Steam Room operation is done by the switch on the front of the control housing:

0 = Off
1 = Steam bath
2 = Rassoul bath

1.1 Programme procedure of the Rassoul

The controller ARB-V1 controls the procedure for a Rassoul. After pressing a push-button that is mounted outside the room the programme is activated. The room light is switched-off and the fiberoptics (not included in the standard scope of delivery) are activated. Furthermore the steam generator changes into the "stand-by" mode. After an adjustable time (5-16min), in which the "mud treatment" happens, the steam generator starts to produce steam for an adjustable time (5-16min). After this time red LED spots are switched-on over every seat in the Rassoul. 3 seconds later the nozzles over every seat start to spray a warm Drizzle Rain. The operation time of the rain is also adjustable at the controller (20 – 200 seconds). Afterward the unit is ready for a re-start.

The set-up of the programme is done by rotary knobs at the front plate of the controller:



Programme and test switch: By this knob every single function of the controller can be tested. The functioning is indicated by a shining of the accordant LED at the control housing. For the standard operation the Poti has to be set on "operation".

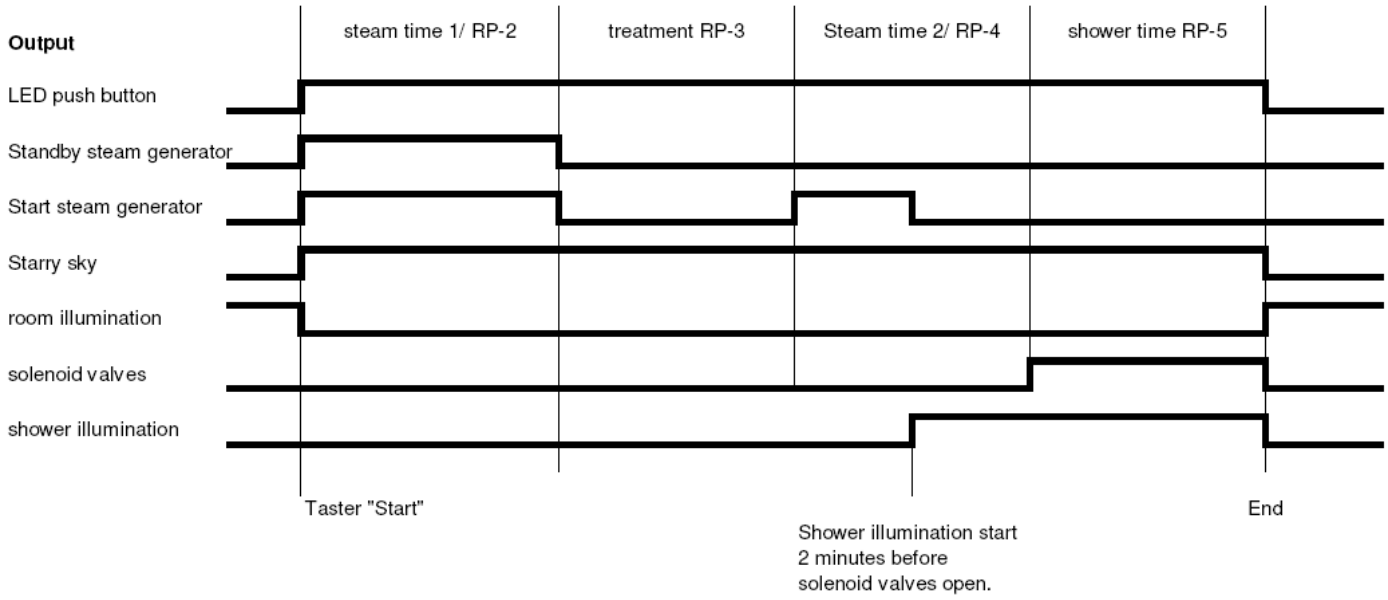
Steam time 1 in minutes: Here you adjust the time between the switch-off of the room illumination and and the start of the steam generator.

Treatment time in minutes: Here you adjust the time of the treatment Rassoul bath. The steam generator switch-off.

Steam time 2 in minutes: Here you adjust the time between the switch-on of the steam generator and the switch-on of the shower.

Shower time in seconds: Here you adjust for how long the shower should last.

1.2 Time diagram Rassoul bath



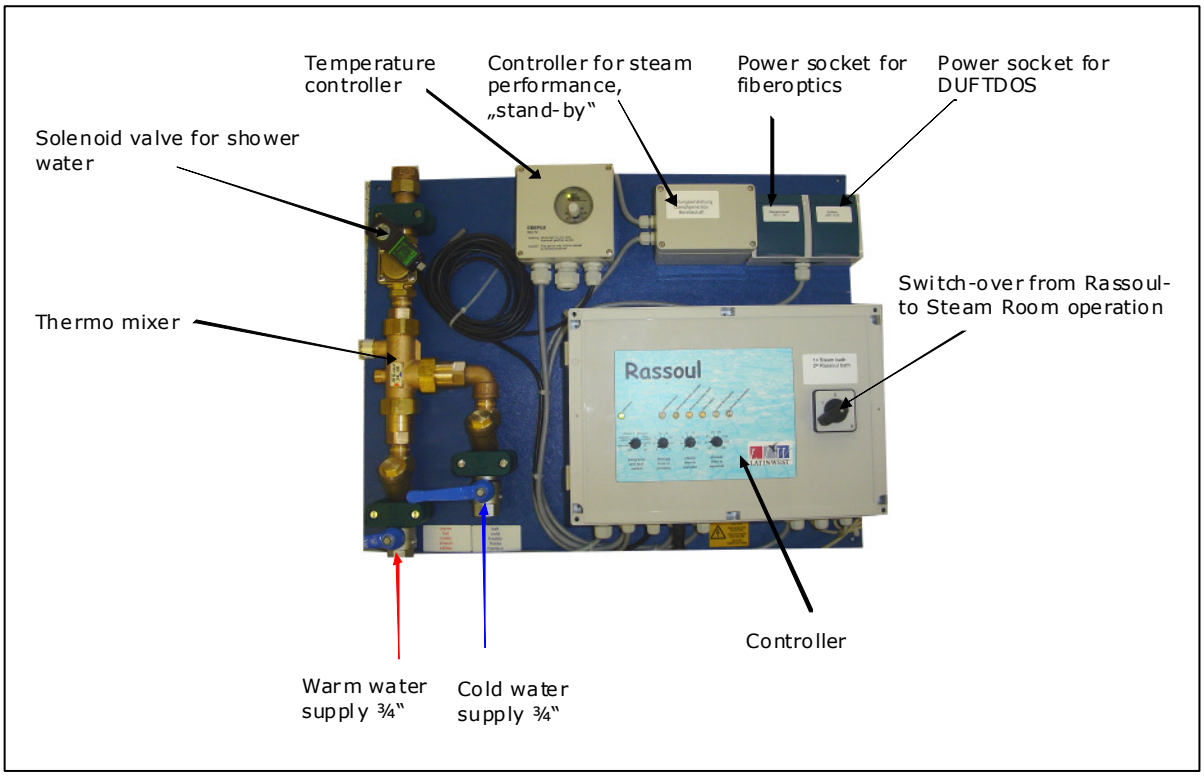
1.3 Temperature adjustment

The temperature control for the Rassoul- and Steam Room is installed on the blue mounting board (see picture). The demanded temperature is adjusted by a rotary knob on the front side of the controller.

The steam generator works until the setpoint of the temperature will be reached. This is indicted by the green LED. As soon as the setpoint has been reached the steam generator is switched-off and the exhaust fan is activated.

2. Technical data

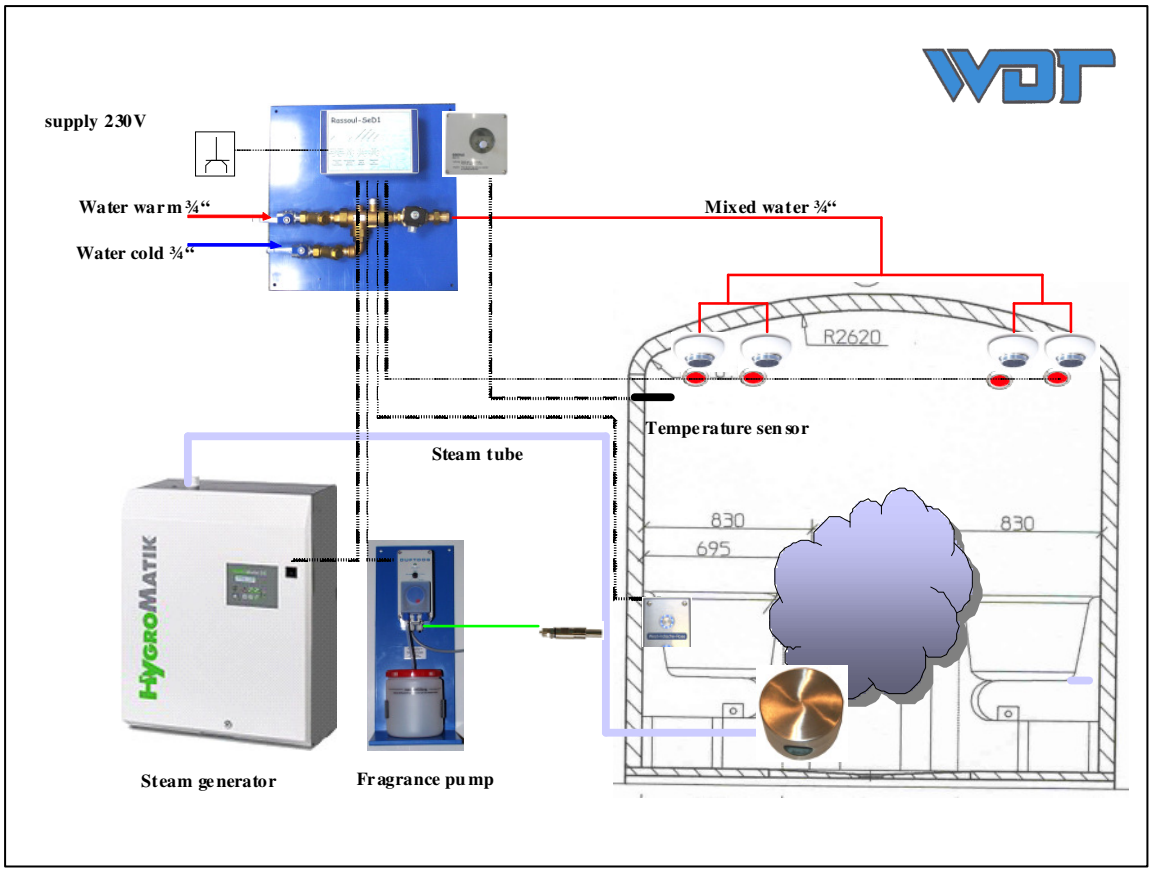
measures:	width 60cm, height 60cm, depth 20cm
weight:	app. 10 kg
voltage supply:	plug 230V



- 1 micro processor controller in housing
- Power supply 230V
- soft closing solenoid valve 230V
- 2 x ball valve ¾ " for water supply
- 2 x filter ¾"
- thermo mixer ¾" (adjustable 30-45°C)
- push button plate 1 fold
- power sockets for fiberoptics and fragrance pump

3. Installation

The control unit ARB-V1 has to be installed at a capable place next to the Rassoul. The water tubing has to be installed according to the following schema. Electrical suplly with power plug 230V/AC. Ensure that the nozzles are not blocked by residues that have been in the tubing if you take the unit into operation for the first time!



- Installation only by authorised staff!!!

- Before taking the unit into operation we recommend to flush all the tubings without nozzles to guarantee that no residues will block the nozzles.

- We recommend to install a fine in-line strainer before the shower techniques!

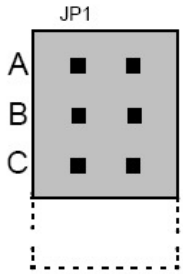
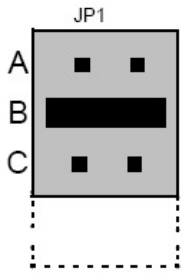
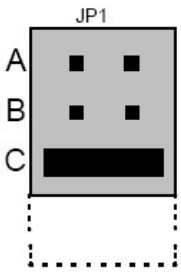
- We recommend to use (softened) water with a low hardness to prevent residues of calcium!

4. Taking the unit into operation

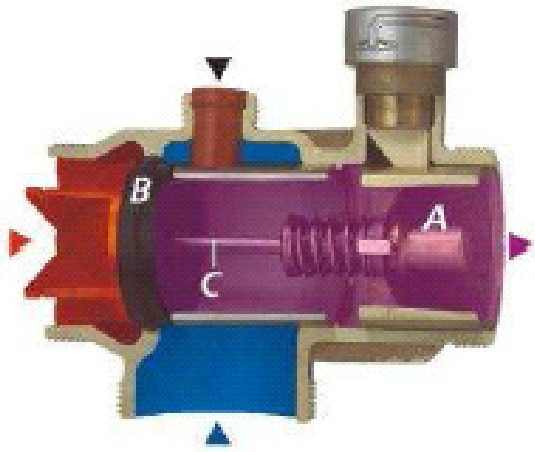
If the whole tubings and the electrical supply are connected the unit is ready for taking it into operation. Put the „Programme switch" on **„off"** and switch-on the unit by the main switch on the left side of the controller housing. The main switch shines red and the operation-LED green. Danach können sämtliche Funktionen wie oben beschrieben (vgl. S.2) getestet werden. Nun müssen die einzelnen Programmfunktionen entsprechend des gewünschten Ablaufs eingestellt werden.

Please consider the wiring connection between the steam generator and the Rassoul controller. The wire for the "performance control" has to be connected according to the wiring diagramme (see point 7). The interlock of the steam generator has to be connected to the temperature sensor. The wires are pre-connected in the Rassoul controller and have to be connected only to the steam generator.

Now the steam generator has to be programmed according to the Hygromatik operation manual:

	Basic	Comfort / Comfort Plus
		
	Note: If the connecting wires carrying the controller signal are able to pick up electromagnetic signals from cables laid in the immediate area, the humidifier could operate unchecked. Therefore, we strongly recommend laying controller signal wires with shielding laid to fit the dimensions of the controller.	
	For a proportional control connected to an external control signal, the jumpers on the PCB must be connected as follows:	For a proportional control connected to an external control signal, Parameters U6 and E3 must be set as indicated below, also see Section „Parameter Setting with Codes (P0=010) / Advanced Customer Level.
Setting for External Control Signal: **0(2) - 10 V DC**		Parameter set **U6** to “external controller” and **E3** to “0-10 V” Also see Section „Parameter Setting with Codes (P0=010) / Advanced Customer Level““
Setting for External Control Signal: **0(4)-20 mA**		Parameter set **U6** to “external controller” and **E3** to “0-20 mA” Also see Section „Parameter Setting with Codes (P0=010) / Advanced Customer Level“ .
Setting for External Control Signal: **0-140 Ohm**		Parameter set **U6** to “external controller” and **E3** to “0-140 Ohm” Also see Section „Parameter Setting with Codes (P0=010) / Advanced Customer Level“.

5. Water temperature adjustment



Cross section

▶	Warm
▲	Cold
▶	Mix / blend
▼	Circulation
A	Thermostat
B	Valve slide
C	Pin
1	Standard temperature
2	Limits of the blended water setting range

Function

The blended water temperature is transmitted to the thermostat A. This compares it with the setpoint value.
If the blended water temperature does not correspond to the setpoint value, then a volume change takes place in thermostat A. This leads to the valve slide B being regulated by the pin C until the blended water temperature corresponds to the setpoint value.

Classification of the thermal blending valves 3400 in accordance with their noise characteristics:

GN	½	¾ - 1 ¼
DN	15	20 -32
Fittings group	I	II

The warm water temperature has to be at least 5 K higher than the blended water temperature.

Standard temperature set by the factory °C	Limits of the blended water setting ranges °C	Change of the blended water temperature with 1 rotation of the key		
		GN ½ - 1	GN 1¼ -2	DN 65 u. 80
25	20-30	ca. 6 K	ca. 4 K	ca. 2 K
40	30-45			
48	38-53			
55	45-65			

6. Maintenance

If the unit will be out of operation for a longer period of time we recommend to empty the whole tubing and to switch the unit off by the main switch. If the pressure should fall down immediately the filter inserts in the supply have to be cleaned.

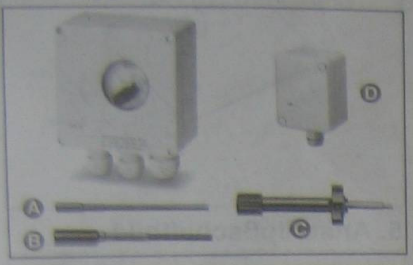
			⇓ to be done!		
1.	**Water part** ⇓		⇓		
1.1	check solenoid valves in test function	OK	[ ]	exchange	[ ]
1.2	solenoid valve diaphragms all every two years	OK	[ ]	exchange	[ ]
1.3	clean pre-filter	OK	[ ]	clean	[ ]
1.4	filter pressure gauge	OK	[ ]	clean	[ ]
1.5	check tube cutter	OK			
1.6	check function of thermo mixer	OK			
2.	**Fragrance pump**				
2.1	function	OK	[ ]	exchange	[ ]
2.2	valve inserts of the pump every two years	OK	[ ]	exchange	[ ]
2.3	diaphragms of the pump every two years	OK	[ ]	exchange	[ ]
2.4	function of the dosing valve 3/8“	OK	[ ]	clean	[ ]
2.5	check dosing tubes	OK	[ ]	exchange	[ ]
2.6	function empty switch	OK	[ ]	exchange	[ ]
3.	**Nozzles**				
3.1	spraying pattern in test function	OK	[ ]	clean	[ ]
3.2	view of the nozzles	OK	[ ]	clean	[ ]
4.	**Controller**				
4.1	Test all functions	OK	[ ]		
4.2	All knobs present?	OK	[ ]		
4.	**Miscellaneous**				
4.1	Clean the whole unit		[ ]		

7. Appendix

Operating Instructions

Electronic Temperature Controller

Type UTR-524 72



Attention 1!
The separately mounted unit must not be opened except by authorised persons, and this should not be attempted unless it is isolated from the power supply. For the connections refer to the circuit diagram provided inside the cover. It is mandatory in all work on the unit to observe the current safety regulations of the VDE, or its national equivalent, and those of the local power supply companies.
In order to qualify for protection class II, it is necessary to comply with the guidelines of VDE 0100, or national equivalent standards.

1. Applications

The controller is suitable for universal use, e.g. for:

Floor direct, floor storage or open area heating systems, swimming pool control, air conditioning.

2. Function

The controller is suitable for:
– heating
– cooling

a) **Heating** (Terminal 1-5)
If the temperature measured by the sensor (actual value) is below the setpoint, the controller is switched ON (relay picks up).
If the temperature measured is above the setpoint, the controller is switched OFF (relay in de-energized position).

b) **Cooling** (Terminal 1-4)
If the temperature measured by the sensor (actual value) is below the setpoint, the controller is switched OFF (relay de-energized).
If the temperature measured exceeds the setpoint, the controller is switched ON (relay picks up).

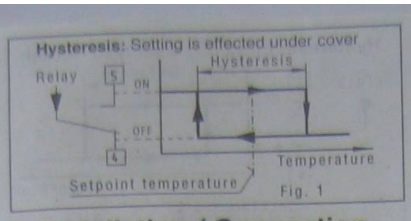
c) **Hyseresis**
Apart from the setpoint, the temperature at which the controller switches over depends also on the hysteresis adjusted (switching differential), see Fig. 1. It can be changed by means of the adjuster "hysteresis."

d) **Temperature setback** :
(lowered setpoint) is effected by closing a **external-floating** contact between terminal 10-11, e.g. by means of an external timer.

The green indicating lamp is lighted when the relay is in on state.

The red indicating lamp warns of sensor failure.

In the event of sensor failure, controller is switched ON. This state is maintained until the fault has been remedied. (Another variant is available which will be in off state if a sensor failure occurs).



3. Installation / Connection

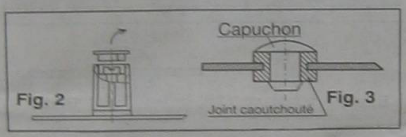
Fix base of housing by means of the 4 holes provided to a suitable surface. Enter cable for power supply and load through the M16 screwed glands. Enter cable for -switching contact and sensor through the PG-16 screwed gland. Cut out -cable opening. Firmly tighten up screwed glands; tightening torque is 25 Nm.

Tightly seal unused screwed glands using suitable material.

Modifikation for internal temperature setting
Proceed as follows:

1. Remove cover by taking out 4 screws
2. Lever out cap at top of adjusting knob. See Fig 2
3. Slacken screw and pull off adjusting knob
4. Push spindle down into the interior
5. Firmly press the closure plug supplied into the hole from the outside (see Fig. 3)
6. Re-place cover.

Attention 2!
In order to qualify for degree of protection class IP 65, it is necessary that the closure plug should be pressed in solidly with the rubber gasket.



Cable for sensor and -contact:
Use screened cables where leads are installed in cable ducts or where they are run in parallel with power cables for some distance.

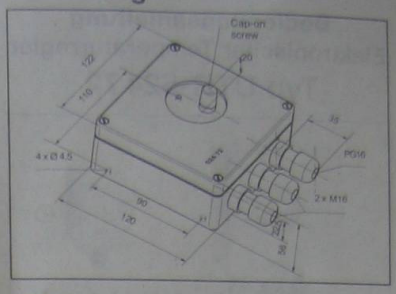
For sensors:
May be extended to a maximum of **100 m** with 1.5 mm² conductor area.

For -contact:
May be extended to a maximum of 10 m with 1.5 mm² conductor area.
Cable diameter: 8.6 mm ±0.3 mm.

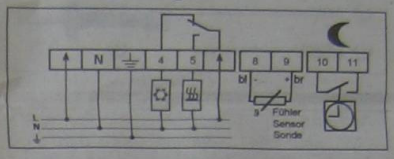
Installation of sensors:
When installing the sensor, make sure that satisfactory contact exists with the heat source. The sensor should be able to follow the temperature changes in the medium to be controlled.
When installing the **standard type of sensor** in liquid media or in areas where access is difficult, it is absolutely necessary to provide a protective tube (to facilitate replacement).
A **pipe-mounted sensor** should contact the pipe as fully as possible.
In the case of **in-air sensors,** care should be taken to ensure that the slot openings are positioned in the direction of the air flow.
For **electric connection,** refer to the circuit diagram provided inside the controller. All leads to the controller must be fixed in place.

Attention 3!
The timer contact must be floating (basic insulation): **parallel connection** of several timer contacts is **not permissible.**
Never apply mains voltage to a **floating** timer contact (this will cause destruction of the controller).

4. Drawing



5. Wiring diagram



6. Technical data:

Order No.	UTR 20 (–40°C… 20°C) UTR 60 (0°C… 60°C) UTR 100 (40°C…100°C) UTR 160 (100°C…160°C)
EDP No.:	0524 72 14 x xxx
Operating voltage:	230 V AC (207…244 V) 48 V…62 Hz
Power consumption:	≤4 VA
Operating temperature:	–20°C…40°C
Storage temperature:	–40°C…70°C
Controller type:	ON/OFF
Switching contact:	Relay 1 x c/o contact, floating*
Switching current: (250 V AC):	≤16 A cos φ = 1 ≤ 4 A cos φ = 0.6
Hysteresis:	±0.5…± 5 K (T ≤100°C) ±0.5…±10 K (T >100°C)
Temperature setback :	Approx. 5 K fixed
Type of sensor:	PTC (KTY 83-110)
Protection class:	II (see Attention 1)
Degree of protection:	IP 65
Cable entry:	Screwed glands: 2 x M16; 1 x PG16
Ordering No. PG 16:	000 19 3829 000
Weight:	Approx. 440 g

*Also for switching safety extra-low voltage (SELV)

Technical data of sensors:

A Standard sensor:

Ordering No.	Ambient temperature	Cable lenght	Protection class	Time constant approx.
F 894 002	–50…175°C	1.5 m	IP 67	30 s
F 891 000	–5… 70°C	4.0 m	IP 67	30 s

B Pipe-mounted sensors:

Ordering No.	Ambient temperature	Cable lenght	Protection class	Time constant approx.
F 892 002	–40…120°C	1.5 m	IP 67	60 s

C Air-monitoring sensors:

Ordering No.	Ambient temperature	Cable lenght	Protection class	Time constant approx.
F 893 002	–40…100°C	1.5 m	IP 30	10 s

D Outdoor sensors:

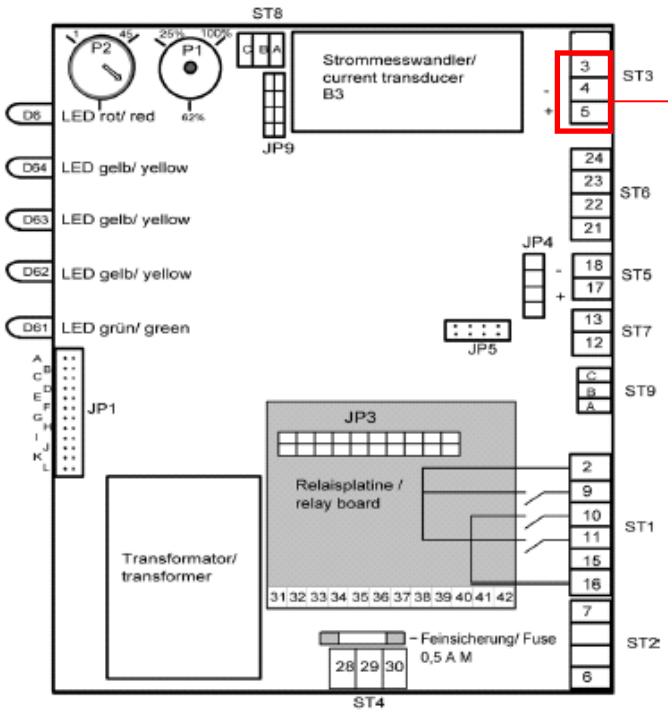
Ordering No.	Ambient temperature	Cable lenght	Protection class	Time constant approx.
F 897 001	–40…80°C	none	IP 65	180 s

Sensor characteristics: (for all types):

°C	Ohm	°C	Ohm	°C	Ohm
-55	500	25	1000	110	1774
-50	525	30	1039	120	1882
-40	577	40	1118	125	1937
-30	632	50	1202	130	1993
-20	691	60	1288	140	2107
-10	754	70	1379	150	2225
0	820	80	1472	160	2346
10	889	90	1569	170	2471
20	962	100	1670	175	2535

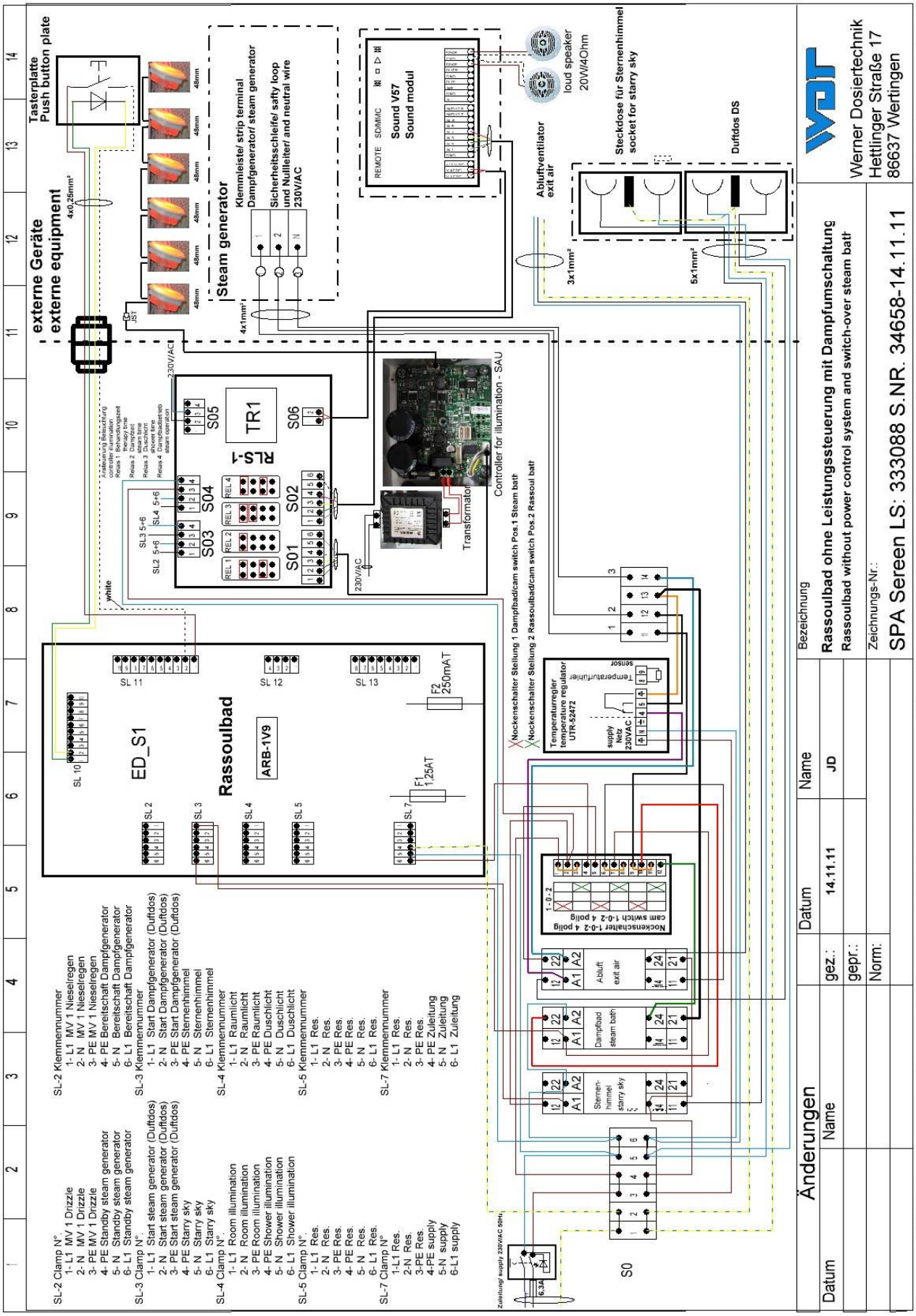
Specification subject to change without prior notice

8. Wiring diagramme



The WDT steam performance controller has to be connected to the connectors 3, 4 and 5 of the Hygromatik controller.

Performance for stand-by operation has to be adjusted by Poti.


externe Geräte
externe equipment
Tasterplatte
Push button plate
Steam generator
Klemmleiste/ strip terminal
Dampfgenerator/ steam generator
Sicherheitsschleife/ safty loop
und Nulleiter/ and neutral wire
230V/AC
Sound V57
Sound modul
loud speaker
20W/4Ohm
Abluftventilator
exit air
Steckdose für Sternenhimmel
socket for starry sky
Duftdos DS
Controller for illumination - SAU
Transformator
RLS-1
TR1
S01
S02
S03
S04
S05
S06
ED_S1
Rassoulbad
ARB-1V9
F1
1,25AT
F2
250mAT
Temperaturregler
temperature regulator
UTR-52472
Nockenschalter 1-0-2 4 polig
cam switch 1-0-2 4 polig
Dampfbad
steam bath
Sternen-
himmel
starry sky
Abluft
exit air
S0
Änderungen
Datum
Name
gez.:
gepr.:
Norm:
14.11.11
JD
Bezeichnung
Rassoulbad ohne Leistungssteuerung mit Dampfumschaltung
Rassoulbad without power control system and switch-over steam bath
Zeichnungs-Nr.:
SPA Sereen LS: 333088 S.NR. 34658-14.11.11
Werner Dosiertechnik
Hettlinger Straße 17
86637 Wertingen